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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,899	10/26/2005	Eric Dichl	PF020137	9210
24498	7590	08/22/2007		
JOSEPH J. LAKS, VICE PRESIDENT THOMSON LICENSING LLC PATENT OPERATIONS PO BOX 5312 PRINCETON, NJ 08543-5312			EXAMINER VERDERAMO III, RALPH	
			ART UNIT 2186	PAPER NUMBER
			MAIL DATE 08/22/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/530,899	Applicant(s) DIEHL, ERIC	
	Examiner Ralph A. Verderamo III	Art Unit 2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/26/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/11/2005</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1 – 3, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jouppi et al. "Tradeoffs in Two-Level On-Chip Caching" (herein after referred to as Jouppi) in view of Bryant et al. US Patent No. 4008460 (herein after referred to as Bryant).

Regarding claim 1, Jouppi describes a device for memorizing a list of items intended to memorize any item last presented to it and capable of memorizing N items (Two level exclusive caching, page 43, section 8) (Sizes of the cache levels are described, page 35, section 2.1), N being a natural integer, wherein said device comprises: a first memory designed to continually memorize M items that were presented to said device (Desired lines are loaded directly to

first level cache (page 43, section 8)), M being a natural integer below N (size of first level cache being less than the total size of both first and second level cache (page 35, section 2.1)), and a second memory, intended to memorize the $N-M$ other items said device additionally comprising means responsible (second level cache stores the items that were removed from first level cache (page 43, section 8)), when the second memory is full and when a new item has to be memorized in said device, for randomly selecting an item memorized in the second memory to remove this selected item and to memorize the new item presented in said device (Pseudo-random replacement (page 35, section 2.1)) (page 43, section 8). Jouppe does not specifically describe that the first memory stores the M items that were last presented to said device.

Bryant describes that one replacement algorithm is LRU (least recently used), whereby the block in the buffer which was referenced least recently (i.e. longest not used) is assumed to be the least important, and therefore can be written over, i.e. replaced with minimum system performance impact (column 1, lines 13 – 18).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have used a LRU replacement algorithm as described by Bryant with the first memory of Jouppe because LRU provides performance benefits by replacing items which have been deemed to be least important because they have been least recently used (column 1, lines 13 – 18).

Regarding claim 2, Jouppi in view of Bryant describe the device according to claim 1 (see above) being also adapted to supply information indicating whether the item that was last presented to it is already present in said device (cache hit (Jouppi, page 43, section 8 and page 37, section 2.5)).

Regarding claim 3, Jouppi in view of Bryant describe the device according to claim 1 (see above), being adapted to contain only one copy of each item memorized (two-level exclusive caching (Jouppi, page 43, section 8)).

Regarding claim 6, Jouppi in view of Bryant describe a method of memorizing an item in a device according to claim 1 (see above), said method comprising the steps consisting in (a) receiving an item that is presented to the device (reference provided to determine cache hit/miss (Jouppi, page 43, section 8)); (b) verifying whether said item is already present in said device; and should said verification be positive, designating said item as an item last memorized, and should said verification be negative, memorizing said item in the device (Detecting cache hit/miss (Jouppi, page 43, section 8) and LRU replacement (designating the recently accessed data as the MRU (most recently used) (Bryant, column 1, lines 13 – 18))).

Regarding claim 7, Jouppi in view of Bryant describe Method according to claim 6, wherein in the event of negative verification in step (b): if the first memory is not full, the item received is memorized in the first memory; and if the first memory is full: i) the oldest item memorized in said first memory is transferred to the second memory (Jouppi, page 43, section 8); and ii) the item

received is memorized in the first memory (Jouppi, page 43, section 8); and iii) if the second memory is full, then an item memorized in said second memory is selected at random to be removed so that the oldest item memorized in said first memory can be transferred to said second memory (Jouppi, page 35, section 2.5).

4. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jouppi in view of Bryant as applied to claim 1 above, further in view of Vishlitzky et al. US Patent No. 5513336 (herein after referred to as Vishlitzky).

Regarding claims 4 and 5, Jouppi in view of Bryant describe the device according to claim 1 (see above). They do not specifically describe wherein it also memorizes, with each item, the number of times that this item has been presented to it or that it is adapted to supply information indicating whether the item that was last presented to it has already been presented to it for a number of times that exceeds a predetermined number.

Vishlitzky describes the use of an access counter which is examined to determine how many times the data element has been accessed (column 16, lines 14 – 26). Examination of the access counter can determine if a data element has been accessed more than some number of times.

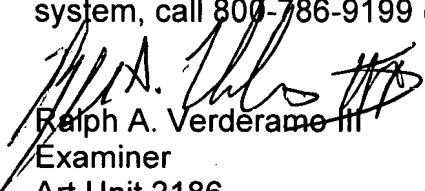
It would have been obvious to one of ordinary skill in the art at the time of the invention to include the access counter as described by Vishlitzky with the invention of Jouppi in view of Bryant because an access counter can determine

the most or least recently used data in order to determine data that should be replaced upon a cache miss.

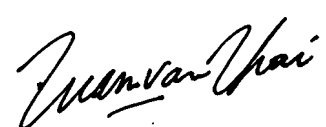
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ralph A. Verderamo III whose telephone number is (571) 270-1174. The examiner can normally be reached on M-Th 7:30 - 5, every other Friday 7:30-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on (571) 272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Ralph A. Verderamo III
Examiner
Art Unit 2186

rv
August 17, 2007


TUAN V. THAI
PRIMARY EXAMINER

50t 8/20/07